



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/799,685	03/15/2004	Takashi Ito	5241-0107PUS1	8648

2292 7590 02/05/2009  
BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
----------

PIERY, MICHAEL T

ART UNIT	PAPER NUMBER
----------	--------------

1791

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

02/05/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/799,685	<b>Applicant(s)</b> ITO ET AL.	
	<b>Examiner</b> MICHAEL T. PIERY	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/5/08.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites “calculating a correction wavefront aberration amount does not include comparing a wavefront aberration amount with a table prepared beforehand.” Applicant discloses the wavefront aberration amount (delta) is determined by comparing the measured wavefront to a reference value (Paragraph 0030) and it is preferable to determine a plurality of wavefront aberration amounts (Paragraph 0050). The reference value, or plurality of reference values, constitutes a table prepared beforehand. The limitation “calculating a correction wavefront aberration amount does not include comparing a wavefront aberration amount with a table prepared beforehand” is not supported by the disclosure as originally filed and is thus treated as new matter.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1791

4. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites “calculating a correction wavefront aberration amount does not include comparing a wavefront aberration amount with a table prepared beforehand.” Applicant discloses the wavefront aberration amount (delta) is determined by comparing the measured wavefront to a reference value (Paragraph 0030) and it is preferable to determine a plurality of wavefront aberration amounts (Paragraph 0050). The reference value, or plurality of reference values, constitutes a table prepared beforehand. It is indefinite how the calculation of the correction wavefront aberration amount does not involve comparing a wavefront aberration amount to the reference value or values (table) prepared beforehand.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-7 are rejected under 35 U.S.C. 102(b) as anticipated by Kawakita (JP 2002-096344) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kawakita (JP 2002-096344) in view of Davis et al. (US 3,434,781).

Regarding claim 1, Kawakita teaches a method comprising the steps of: designing and making, according to the optimized form of the optical device, a temporary molding die for molding the optical device (Paragraph 0020); molding a first temporary optical device by using the temporary molding die (Paragraph 0023); measuring a wavefront aberration of thus molded first temporary optical device and calculating the aberration amount (0024); calculating a

Art Unit: 1791

correction wavefront aberration compensating for the wavefront aberration (Paragraph 0027); designing by using at least the plurality of optical parameters a second temporary optical device for optimizing a form so as to exhibit the correction wavefront aberration (Paragraph 0033); and designing, according to the optimized form of the second temporary optical device, a normal molding die for molding a normal optical device (Paragraph 0033 and Paragraph 0023). The examiner interprets Kawakita discloses determining the wavefront aberration amount by comparing to a table, then calculating the corrected aberration amount using a formula (Paragraph 0011). Alternatively, Davis teaches it is equivalent to display reference values of lens aberrations in tabular and graphical formats (Column 9, lines 54-60). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the process of Kawakita to display the reference values in graphical format and calculate the correction spherical aberration value by calculating the difference between a wavefront aberration amount and a value displayed in a graph because it has been held that substitution of known equivalents is within routine skill of one in the art.

Regarding claim 2, Kawakita teaches a method according to claim 1, as discussed above, further comprising the steps of: molding the normal optical device by using the normal molding die (Drawing 1); measuring a wavefront aberration of thus molded optical device (Paragraph 0024); and recalculating the correction wavefront aberration when the wavefront aberration has a value greater than a predetermined reference value (Paragraph 0027), and repeating subsequent steps until the value of the correction wavefront aberration becomes the reference value or less (Drawing 2).

Art Unit: 1791

Regarding claim 3, Kawakita teaches a method according to claim 1, as discussed above, wherein the wavefront aberration correction and wavefront aberration are measured by using an interferometer apparatus for measuring a transmitted wavefront (Paragraph 0024). Kawakita discloses using transmitted wave side measurement; this type of measurement is the function of an interferometer.

Regarding claim 4, Kawakita teaches a method according to claim 1, as discussed above, wherein a plurality of wavefront aberration amounts are measured in a plurality of divided areas, respectively, and respective correction wavefront aberration amounts are calculate for thus measured plurality of wavefront aberration amounts (Paragraph 0024).

Regarding claim 5, Kawakita teaches a method according to claim 1, as discussed above, wherein at least one surface of the optical device is an aspheric surface (Paragraph 0020).

Regarding claim 6, Kawakita teaches a method according to claim 1, as discussed above, wherein the optical device is a single lens, used for an optical pickup objective lens, having aspheric surfaces on both sides (Paragraph 0002).

Regarding claim 7, Kawakita teaches a method according to claim 1, as discussed above, wherein the molding die is used for pres molding or injection molding (Paragraph 0038).

### ***Response to Arguments***

Applicant's arguments filed November 5, 2008 have been fully considered but they are not persuasive.

Applicant argues that the present application does not compare the wavefront aberration amount with a table prepared beforehand. The examiner disagrees. Paragraph 0032 discloses

Art Unit: 1791

the correction wavefront aberration amount is calculated to compensate for the wavefront aberration amount. Applicant further states (Figure 1) wavefront aberration amount is compared to a reference value or reference values. The examiner interprets the reference value(s) to be prepared beforehand and the organization of reference values constitutes a table. The wavefront aberration amount is compared to a table. The correction wavefront aberration amount is then calculated by using the wavefront aberration amount (Figure 1 (4)) which has been compared to a table. Therefore, in the process of calculating the correction wavefront aberration amount, the wavefront aberration amount is compared to a table. Further, applicant's example of calculating the correction wavefront aberration amount when expressed to correspond to the interference fringe image (Paragraph 0033) includes determining the deviation of interference fringes from their linearity. Because the linearity of interference fringes is a constant set of values, one of ordinary skill in the art at the time of the invention would immediately envisage providing the linearity values in a table prepared beforehand. Optical parameters such as aspheric surface constants, thickness, curvature and eccentricity, have desired constant values which can readily be prepared in a table. Calculating the deviation of a property from the ideal value of a property is essentially comparing the property to a table.

Applicant argues that values displayed in graphical form are a type of table. The examiner disagrees. Merriam-Webster defines table as a systematic arrangement of data usually in rows and columns for ready reference, and a graph as a diagram (as a series of one or more points, lines, line segments, curves, or areas) that represents the variation of a variable in comparison with that of one or more other variables. A graph can be a pictorial representation of a table, but is advantageous since it allows users to easily compare the variation of a variable



Art Unit: 1791

with that of another. The examiner modified Kawakita with Davis to teach substitution of a graph for the table. Values of lens aberrations would readily be determined by referencing the graph and not comparing to a table.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL T. PIERY whose telephone number is (571)270-5047. The examiner can normally be reached on M-Th 7:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael T Piery/

Examiner, Art Unit 1791

/Monica A Huson/

Primary Examiner, Art Unit 1791